Position Paper
Wildfire Prevention in the Mediterranean
A key issue to reduce the increasing risks of Mediterranean wildfires in the context of Climate Change

This position paper on Wildfire Prevention was endorsed by the main Mediterranean stakeholders during the Second Mediterranean Forest Week organized in Avignon from 5 to 8 April 2011. This document is an opportunity to address wildfire prevention in the context of climate change and to implement these recommendations in all countries of the Mediterranean.

Introduction

A unique opportunity to raise awareness at international level on wildfire prevention was presented by two recent workshops: one on "Forest Fires in the Mediterranean Region: Prevention and Regional Cooperation", held in Sabaudia, Italy in 2008 [1] and another on "Assessment of Forest Fire Risks and Innovative Strategies for Fire Prevention", held in Rhodes, Greece in 2010 [2]. The workshops' objectives were the review of current prevention systems in Mediterranean countries, the identification of new strategies and policies needed in this area and the formulation of conclusions and recommendations on prevention of wildfires. A synthesis of these conclusions and recommendations are available in this Position Paper, which will be presented during the regional sessions of the 5th International Wildland Fire Conference (IWFC) in South Africa (Sun City – 11th May 2011).

1 - See report of Sabaudia workshop on: http://www.ec.europa.eu/environment/forests/studies.htm
2 - See report of Rhodes workshop on: http://www.foresteurope.org/filestore/foresteurope/Publications/pdf/FOREST_EUROPE_Forest_Fires_Report.pdf

Background and justification for this Position Paper

Why are wildfires so relevant in the Mediterranean?

Wildfires destroy biodiversity, increase desertification, affect air quality, the balance of greenhouse gases and water resources. Wildfires can further have negative effects on human life and health (wildfires in Greece in 2007 caused the death of 84 people) human property and wellbeing, cultural and natural heritage, employment, recreation, economic and social infrastructures and activities,

In the light of the scientific world's diagnosis of new climatic scenarios, managers are faced with a general trend of increased burnt areas and a rise in the frequency, intensity and severity of fires, as well as a prolonged risk seasons. Wildfires destroy around 500.000 hectares every year in the European Union, 0.7 to 1 million hectares in the Mediterranean basin. This has a serious impact on the environment and on socio-economic activities, especially in southern Europe and Northern Africa.

One of the greatest challenges of sustainable forest management in the Mediterranean Basin is the fight against wildfires, an ever present and increasing threat because of climate change.

Silva Mediterranea Forest Fires Working Group

Silva Mediterranea constitutes an international forum, which through the years has allowed sharing experiences and knowledge as well as combining and coordinating efforts to prevent and fight wildfires. These important roles have been developed through the build up of a network between all the Mediterranean Basin countries. During the last decades, the work of Silva Mediterranea has kept promoting the exchange of information about wildfires between countries in the Mediterranean Basin. Taking into advantage the launching of the European Forest Fire Information System (EFFIS) by the European Commission, FAO, with the help of Silva Mediterranea and other key partners, organized several seminars to promote the idea of the necessity of gathering data that will allow a better knowledge of wildfires in the region. International Research Centres added their efforts to this objective, like the CIHEAM that coordinates, with Silva Mediterranea, the organization of seminars in France, Greece, Spain, Tunisia and Morocco. Nowadays, we are still working on this exchanges of experiences, sure that the importance of extending the knowledge on wildfires to face the battle in the most efficient way: this is, with a common decentralized data base, compatible with the ones the Mediterranean European countries have, which will enable the exchange and analysis of data to help the establishment of suppression and prevention strategies. As a response, the Silva Mediterranea Forest Fires Working Group developed a work plan for the period 2009 to 2012. Among its objectives is the extension of EFFIS to all the countries of the Mediterranean Basin, members and non-members of the European Union, to create a decentralized and common database on wildfires.

Causes of wildfires and increased risks in the Mediterranean

Social context and social change

One of the main causes for wildfires lies rooted in an old tradition widespread "all over the world" that uses fire as a vegetation management tool by farmers and overall stockbreeders. Rural populations still need to control the vegetation for maintaining grasslands or other lands free of scrubs. For this purpose, they use fire as a primary form of land clearing.

The perception of risk is low because forests are considered as agro ecosystems of low value. This traditional use increases the risk of wildfire in the Mediterranean (In addition, the current state of vegetation maintains and reinforces the need for traditional use of fire because its conditions make it unfavourable for traditional uses like pasturages. The current state of evolution of the Mediterranean is closely connected with the number of wildfires and with their severity. Fuel management is one of the main factors for controlling wildfires. Neither the number nor the severity of the fires can be understood without understanding the actual state of vegetation).

The changing of socio-economic and environmental conditions in many European rural areas (e.g. Vegetation encroachment and the aging of rural population) have increased the risk related to traditional fire use which, in turn, can result in damaging wildfires. Fire is also used as a management tool to control and define the type of vegetation cover, but sometimes it can spread out of control leading to large-scale wildfires with negative impacts in the Mediterranean region as well as in other countries with similar climatic characteristics.

The intense urbanization of our societies, the abandonment of rural lands and rural activities – such as forest management –

along with the rapidly expanding of urban/forest interface are key drivers for wildfires in Europe and in the Mediterranean region.

Vegetation and vegetation dynamics

Weather, forest structure, types of vegetation and human activity for centuries have turned the Mediterranean forests into a very complex system in constant evolution and requiring a specific suitable management.

Due to rural abandonment and to changes in production models (which have taken place in the last half century in many Mediterranean regions) vegetation is in a phase of very unfavourable development. This increases wildfire risks especially in the context of urbanization in the Mediterranean region (In many regions, there are large areas with high fuel loads without discontinuities. Vertical structure is also prone to high crown fires due to the high share of fine fraction both living and dead. This leads to a very high risk of catastrophic fire. This situation will be reproduced in all areas where increased urbanization and rural abandonment take place in the near future).

Climate and climate change

Ecosystems, all around the Mediterranean Rim, are strongly conditioned by the Mediterranean climate, characterized by hot and dry summer. They are ecologically very different from other ecosystems. Hence, these Mediterranean ecosystems need specific approaches and treatment.

Climate change will not only impact growth conditions for Mediterranean forests, it will also have an important effect on disturbance patterns, mainly those related to periods of higher temperature and longer drought that may become more frequent in parts of the Mediterranean region.

The Joint Research Centre of the European Union in Ispra recognizes that changes in wildfire risks due to climate change will become a clear focus for the XXI Century (Future trends of wildfire risks in the Mediterranean region, as a consequence of climate change, will lead to the increase of temperature in the East and West of the Mediterranean, with drought and precipitations especially concentrated in other parts of the region).

An urgent need for wildfire prevention in the Mediterranean

It has been widely recognized that prevention is the most effective approach to face wildfires. FAO's Fire management Voluntary Guidelines state that: "Fire prevention may be the most cost-effective and efficient mitigation programme an agency or community can implement". Preventing unwanted, damaging fires is always less costly than suppressing them. Even regions with well-prepared fire brigades, equipped with sophisticated ground and aerial equipment and a substantial number of fire fighters have been unable to stop a number of large-scale disastrous wildfires in recent years. After several decades focused on wildfire suppression both at national and international level, currently, there is a considerable deficiency in wildfire prevention.

Although it is accepted that prevention is more efficient than suppression in wildfire fighting, it is urgent to give a major boost to wildfire prevention in particular with the following priority: prevention should be focused on "sustainable forest management" and on "sustainable rural areas management", to limit the risk of wildfires in the Mediterranean, particularly, in the context of climate change.

Why is regional integration needed between Europe and the South of the Mediterranean?

Owing to the transboundary nature of wildfires, the planning for their prevention should be addressed from an European and Mediterranean regional perspective. As the "Green Book on Forest Protection and Forest Information in the European Union" (European Commission) notes, significant prevention efforts made by the EU and its member states have been focused on training, investigation, awareness and structural prevention.

However, these efforts need to be intensified to deal with the consequences of climate change. In this context the correlation between active forest management and reduction of fires is crucial.

Impact of climate change on risks of wildfires

In the various scenarios presented by the IPCC, the Mediterranean region has to cope with a great increase in the aridity of its climate. Even if the response of the ecosystems remains difficult to anticipate, it is certain a very considerable increase in the threat of wildfire, desertification and loss of biodiversity. Furthermore, new constraints hang over farmers, in particular the scarcity of water resources. The management of forestry and natural land will have to be more careful as we do not know where to situate the ecosystems' thresholds of resiliency beyond which irreversible deterioration could occur. It is increasingly accepted that sustainable management must be grounded on good governance, implementing guiding principles of: subsidiarity, devolution of authority, evaluation ex ante and ex post, responsibility and accountability, participation of all stakeholders and all publics concerned or involved. Even if these principles are relatively simple to state, they are not so easy to put into practice: they are often numerous administrative, legal and even psychological and sociological obstacles that ender their implementation. Climate change will contribute to raise the catastrophic wildfire risk in the Mediterranean. To reduce the risk of catastrophic wildfires it is required to manage the two following factors: the number of fires and the current vegetation structure. As the number of fires is closely related with the vegetation state a key solution would be to modify the current vegetation structure. This is an urgent issue to be addressed at a landscape level and with an ecosystem approach. An appropriate vegetation structure would also add economical value to Mediterranean forest ecosystems.

Networks (Silva Mediterranea working group on Forest Fires, EU Commission Expert Group on Forest Fires and EFFIS, UNECE FAO Team of Specialists on Forest Fires, etc.) constitute international fora, sharing experiences and knowledge as well as combining and coordinating efforts to prevent and fight wildfires during the last decades.

Forest ecosystems play a very important role in providing multiple goods and services to all inhabitants of the Mediterranean. Hence their conservation deserves a strong support from the European Union. Financial grants are needed to provide regional tools as, for example, the Network of Protected Areas "Natura 2000" (Structural Funds and Rural Development Funds).

Main conclusions of this Position Paper

Recognizing the relevance of prevention of wildfires at the Pan European and Pan Mediterranean levels and based on a synthesis of conclusions of several recent events organized in the Mediterranean for improving prevention of wildfires the main conclusions of this Position Paper adopted during the II Mediterranean Forest Week are:

– Rural abandonment and decline of forest economy in the Mediterranean Basin are a major concern as climate change may aggravate the natural conditions of wildfire risks;

– Priority has to be given to a participatory approach for wildfire prevention, in particular, to local population, as primary players in making prevention of wildfires effective, and to public and private stakeholders of the forest sector (local approach, local actions and local analysis of causes);

– Protection of forest ecosystems or other wooded lands in Europe and the Mediterranean Basin cannot be effective if wildfire prevention strategies are not integrated in national and regional forest programs/policies in the context of climate change;

– Wildfire prevention should be considered as an important part of sustainable forest management and should integrate a landscape approach taking into account different land uses;

– Wildfire in the urban interface area constitute a difficult issue to cope with in the context of socio-economic changes, which requires specific approaches in the Mediterranean;

– The appropriate fuel treatment (biomass reduction) is a key factor to decrease wildfire risks. Preventive silviculture, which main target is crown fire avoidance by treating surface fuels and promoting low density and vertically discontinuous stands, should integrate the landscape approach and the choice of proper species in order to increase the resilience of forest ecosystems to wildfires. The profitability of forest ecosystems (goods and services – payment for environmental services) has to be promoted in order to avoid human causes of wildfires.

Prevention of wildfires is the most effective tool in a context of limited resources

Investments on prevention are needed for adaptation of Mediterranean forest ecosystems to climate change

List of supporting organizations of this Position Paper on prevention of wildfires

This position paper on wildfire prevention in the Mediterranean is endorsed by:

– Representatives of members of the Collaborative Partnership on Mediterranean Forests (CPMF Organizations and Morocco, Algeria, Syria, Tunisia, Lebanon and Turkey).

– Members of the FAO - Silva Mediterranea Enlarged Executive Committee including representatives from the following member states (Bulgaria, France, Morocco, Turkey and Portugal) and coordinators of the six working groups.

– Members of the FAO Working Group on Forest Fires coordinated by Spain (WG1).

– Forestry Department of FAO and the Secretariat of the Committee Silva Mediterranea.

– Plan Bleu (UNEP/MAP).

– EFIMED, Mediterranean Office of the European Forest Institute (EFI).

– INRA - Research Unit on Mediterranean Forest Ecology.

– International Association for Mediterranean Forests (AIFM).

– International Centre for Advanced Mediterranean Agronomic Studies (CIHEAM).

– WWF (World Wildlife Fund) Mediterranean Programme Office.

– ARCMED: Forest Owners Association of the Mediterranean.

– USSE: Union de Sivicultores del Sur de Europa.

– Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ).

– Mediterranean Model Forest Network (MMFN).

– Centre Tecnòlogic Forestal de Catalunya (CTFC).

Relevance of wildfire prevention in the context of climate change

It has been widely recognized that prevention is the most effective approach to face wildfires. FAO's Fire Management Voluntary Guidelines state that: "Fire prevention may be the most cost-effective and efficient mitigation programme an agency or community can implement". Preventing unwanted, damaging wildfires is always less costly than suppressing them. Even regions with well-prepared fire brigades, equipped with sophisticated ground and aerial equipment and a substantial number of fire fighters have been unable to stop a number of large-scale disastrous wildfires in recent years. Those fires caused severe ecological damages, tremendous impacts on livelihoods, infrastructure, tourism and even a dramatic toll in human lives. Despite recent advancements in international initiatives (e.g. FAO's Voluntary Guidelines, Forest Fires and The Law Review FAO), forest information and monitoring (e.g. European Forest Fire Information System - EFFIS- at the European level), results of large scale research projects financed by the European Commission (e.g. FIRE PARADOX), and publications (e.g. EFIMED "*Living with Wildfires: what science can tell us?*"), still, for multiple causes, prevention captures a small fraction of the budgets available for wildfire management, a small share of public attention and almost no place in the news. Direct financial support for wildfire prevention is weak and fragmented (even if in the past EU spent millions of euro for forest fire prevention under Rural Development Regulation). Legal frameworks are not harmonized among countries and there is a lack of comprehensive financial instruments while best practices do not expand easily from one region to another. Thus, there is a considerable room for improving and innovating in wildfire prevention programs and activities. This improvement will revert on positive effects on wildfire management. Several innovation areas have already been identified: (i) Comprehensive and participatory approaches; (ii) Political and public awareness on the potentiality and effectiveness of prevention; (iii) New financial and policy instruments; (iv) Risk assessment and early detection technologies and (v) International cooperation at the pan European & Mediterranean level.

Position Paper - Executive summary

Wildfire Prevention in the Mediterranean

A key issue to reduce the increasing risks of Mediterranean wildfires in the context of Climate Change

While wildfires are already a preoccupation in the Mediterranean, in the light of the scientific world's diagnosis of new climatic scenarios, managers are faced with a general trend of increased burnt areas and a rise in the frequency, intensity and severity of fires (a wildfire is any uncontrolled fire in combustible vegetation that occurs in the countryside or a wilderness area.
Other names such as brush fire, bushfire, forest fire, grass fire, hill fire, peat fire, vegetation fire, veldfire and wildland fire may be used to describe the same phenomenon depending on the type of vegetation being burned). Significant prevention efforts have been focused on training, investigation, awareness raising and structural prevention. As a consequence of social economic processes (rural abandonment, aging of rural populations, changing management of production system, etc.), the vegetation structure has already changed drastically increasing the risk of a traditional fire use (traditional fire is the use of fire by rural communities for land and resource management purposes based on traditional know-how).

However, these efforts need to be intensified to deal with the consequences of climate change.

The opportunities to address wildfire prevention at international level were identified within the framework of:
1. The 4th International Conference on Wildland Fire in Seville, Spain (2007);
2. The FAO Workshop on "Forest Fires in the Mediterranean Region", Sabaudia, Italy (2008);
3. The workshop on "Assessment of Forest Fire Risks and Innovative Strategies for Fire Prevention", Rhodes, Greece (2010).

During those workshops, several recommendations on wildfire prevention were provided by experts from Mediterranean countries. The present position paper was prepared on the basis of the conclusions and recommendations of these previous events in the Mediterranean.

The main recommendations of this position paper on wildfire prevention are focused on:
1. Enhancement of the international cooperation on wildfire prevention;
2. Integration of wildfire prevention in National Forest Programs/Policies and in National Strategies for Adaptation to climate change;
3. Promotion of knowledge and education on wildfire prevention;
4. Enhancement of sustainable financial mechanisms for prevention of wildfires;
5. Enhancement of harmonized Information Systems to deal with new wildfire risks.

This position paper on Wildfire Prevention was endorsed by the main Mediterranean stakeholders during the Second Mediterranean Forest Week organized in Avignon from 5 to 8 April 2011. This document is an opportunity to address wildfire prevention in the context of climate change and to implement these recommendations in all countries of the Mediterranean. It will also be presented as the position of Mediterranean stakeholders during regional sessions of the 5th International Wildland Fire Conference to be held in South Africa (Sun City) on May 11, 2011.